JUN 2 9 1995

Wagner, Heindel, and Noyes, Inc.

• Consulting Hydrogeologists
• Engineers
• Environmental Scientists

P.O. Box 1629 Burlington, Vermont 05402-1629 802-658-0820
FAX: 802-860-1014

June 28, 1995

Mr. Jason Feingold
Sites Management Section
Agency of Natural Resources
103 South Main Street
Waterbury, VT 05671-0404

RE: Our Lady of Providence Convent
Site #94-1719

Dear Mr. Feingold:

Please find enclosed a summary report describing activities completed under the Additional Site Characterization and Soil Treatment Plan submitted January 27, 1995. Based on the results of our testing, we are petitioning the SMS for site closure.

If you have any questions regarding this report, please contact me or Jeff Noyes at (802) 658-0820.

Sincerely,

David J. Reese
Staff Hydrogeologist

DJR/ral

Enclosure

cc: Bob Davenport

H
W N
Wagner, Heindel, and Noyes, Inc.
• Consulting Hydrogeologists
• Engineers
• Environmental Scientists
P.O. Box 1629 Burlington, Vermont 05402-1629 802-658-0820
FAX: 802-860-1014

OUR LADY OF PROVIDENCE CONVENT
47 West Spring Street
Winooski, Vermont

INTERMEDIATE CHARACTERIZATION AND SOIL TREATMENT SUMMARY

1.0 OVERVIEW

Company performing work: Wagner, Heindel, and Noyes, Inc.
Company address: P.O. Box 64709, Burlington, VT 05406-4709
Company telephone: 802-658-0820
Company fax: 802-860-1014

Site owner: Our Lady of Providence Convent
Contact: Mr. Bob Davenport
Address: 47 West Spring Street, Winooski, VT 05404
Telephone: 802-655-2395

Tank owner/operator: Our Lady of Providence Convent

2.0 SCOPE

This report documents the site characterization and soil treatment plan requested by the SMS and performed by WH&N for Our Lady of Providence Convent/Mr. Bob Davenport of Winooski, Vermont. The purpose of this investigation is to monitor the treatment progress in subsurface soils and impact to receptors if any following removal and replacement of a #2 fuel oil underground storage tank (UST). This project involved the installation of two monitoring wells and an assessment to determine the potential impact to nearby receptors. This summary report includes well logs, groundwater analytical results, site map, conclusions and recommendations.

3.0 SITE LOCATION AND HISTORY

Our Lady of Providence Convent is located in Winooski, Vermont. A 10,000 gallon UST was removed from the courtyard which is bounded by St. Peter Street to the north, Weaver Street to the east, and West Spring Street to the south. Private residences are located to the west of the property (see Appendix 1).

WH&N oversaw the removal of the tank by MacIntyre Fuels of Middlebury, Vermont on October 19, 1994. During the tank pull soils screened with photoionization detector (PID) measured peak concentrations of 42 ppm. Approximately 8 cubic yards of contaminated soil was mixed with fertilizer and backfilled to near surface. Subsequently, the SMS requested additional site monitoring and subsurface testing.

4.0 INITIAL SAMPLING AND SCREENING OF SOIL AND GROUNDWATER FROM PETROLEUM HYDROCARBONS

On April 13, 1995, WH&N contracted M&W Soils Engineering Inc. to install two monitoring wells. Soil logs are found in Appendix 2. The study area is gently sloping to the west with soils consisting of primarily silty sands and gravel. Groundwater was encountered between 8 and 9 feet below ground surface (bgs). Cuttings samples were retrieved and screened for VOCs with a PID equipped with 10.2 eV probe. During well installation, only slightly elevated VOC concentrations of 2.2 ppm were observed in upper 5 feet to ground surface of MW-1 (see soil logs). This concentration as related to initial PID screening of 42 PPM represents a 95% contaminant reduction. As noted on the logs, monitor wells were equipped with 0.02" factory slotted and threaded Schedule 40 riser 2" PVC pipe, filter sock and end caps. Well completion incorporated sand pack above screen, bentonite seal and native soils backfilled to surface.

Groundwater samples from both wells were taken April 21, 1995, for laboratory analysis via EPA Method 602. These results were at non-detect levels with no unidentified peaks observed in each well (Appendix 3). Concurrently, soil samples were cored and screened for VOCs. No significant concentrations above background were observed for soils within 4 feet bgs, thereby exhibiting 100% contaminant reduction.

A reconnaissance of the site as well as adjacent residential property was conducted with a PID on May 30, 1995. All volatile organic compound concentrations were found to be at background levels. Mr. Steve Woodworth, Superintendent of Public Works in Winooski,

was interviewed in order to determine potential locations for sensitive receptors. Mr. Woodworth confirmed that all buildings, homes and apartments in the area are supplied by municipal water and sewer from the Champlain Water District. There are no domestic or commercial water supplies in the area.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Field testing and analytical results indicate that low levels of contamination was encountered during initial drilling of MW-1 only. The second water sampling and soil screening event is scheduled for October 1995. Given the results of these tests, WH&N petitions the SMS for site closure.

[U:\DREESE\WPDOCS\CONVENT.R1]

QUAD: BURLINGTON, VT

Wagner, Heindel, and Noyes

CONSULTING SCIENTISTS AND ENGINEERS

• Hydrogeology • Ecology •

• Environmental Engineering •

BURLINGTON, VERMONT

FIGURE 1

OUR LADY OF PROVIDENCE CONVENT

WINOOSKI, VERMONT

USGS TOPOGRAPHIC MAP

DATE: 6-11-95	SCALE: 1:24000	DRN: LAG	APP'D: JEN

OUR LADY OF PROVIDENCE CONVENT

WINOOSKI, VERMONT

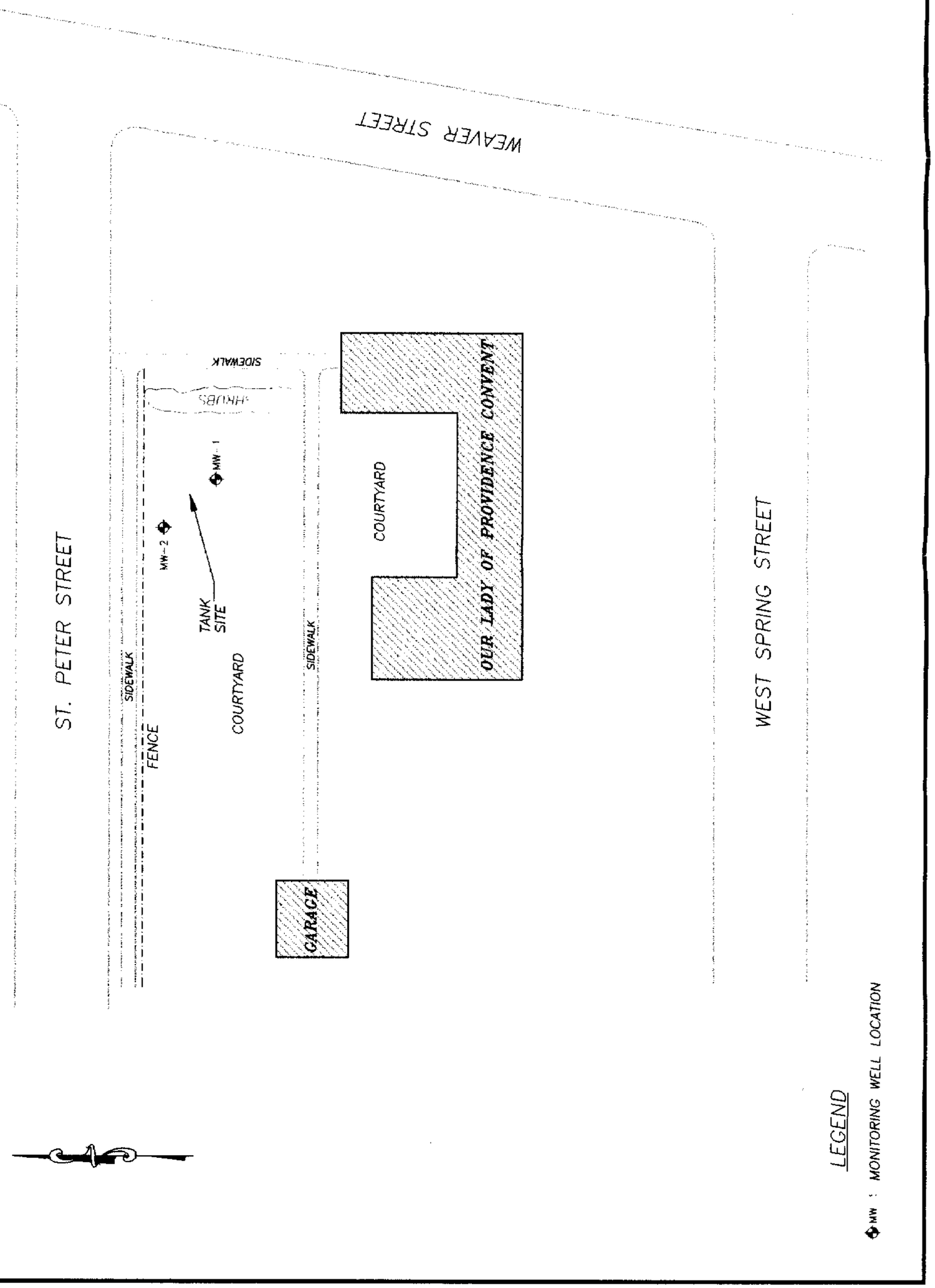
SITE PLAN

SCALE: NOT TO SCALE | DATE: JUNE 27, 1995

Wagner, Heindel, and Noyes, Inc.
CONSULTING SCIENTISTS AND ENGINEERS
• Hydrogeology • Ecology •
• Environmental Engineering •
P.O. BOX 6709 BURLINGTON, VERMONT 05406-4709

PROJECT NO. 94567 | DRAWN BY: TM. Lawson

FILE: c:\DAVENPRT\SITEPLAN | APPROVED: J. Noyes



SOIL BORING LOG

WAGNER, HEINDEL & NOYES, INC. P.O. BOX 64709 BURLINGTON, VT 05406-4709	Project: DAVENPORT/ CONVENT	Boring Number: MW-1 Sheet: 1 OF 2 Project Number: 94367.1

Boring Company: M & W Soils Engineering Inc., Charlestown, NH
Foreman: Myron Domingue
WH&N Staff: David Reese
Rig and drill stem: 4.5 solid stem, 9" hollow stem augers
H-Nu #2 calibrated background 0.1 ppm

Boring Location: Southwest of Tank

Date Started: April 13, 1995

Date Ended: April 13, 1995

Casing
Size: _____

Sampler
Type: _____

Other: _____

Hammer: _____
Fall: _____

Hammer: _____
Fall: _____

Groundwater Readings

Date	Depth	Casing	Stabil. Time

Sample No.	Recovery	Depth	Blows	PID	Description
1	N/A	0 - 5	cuttings	2.2	Gray silty sand fill; gravel.
2		5 - 10	cuttings	0.2	Brown-grey silty sand. Water at 8' bgs.
3		10 - 15	cuttings	0.2	Brown silty sand.

2" Schedule 40 Threaded PVC Monitor Well Installation:

Screen: factor slotted 0.02" with filter sock, 12 - 7' bgs
Sand pack: 7 - 6' bgs
Bentonite: 6 - 5' bgs
Clean sand fill: 5' - surface
Cement: N/A
Well guard: N/A
Stickup: 0.68'
Total depth: 12.68 TOC
Depth to water: 9.15 TOC

WAGNER, HEINDEL & NOYES, INC. P.O. BOX 64709 BURLINGTON, VT 05406-4709	Project: DAVENPORT/ CONVENT	Boring Number: MW-2 Sheet: 2 OF 2 Project Number: 94367.1

Boring Company: M & W Soils Engineering Inc., Charlestown, NH
Foreman: Myron Domingue
WH&N Staff: David Reese
Rig and drill stem: 4.5 solid stem, 9" hollow stem augers
H-Nu #2 calibrated background 0.1 ppm

Boring Location: West of Tank

Date Started: April 13, 1995 Date Ended: April 13, 1995

Casing
Size: _____ Type: _____

Hammer: _____
Fall: _____

Sampler
Type: _____ Other: _____

Hammer: _____
Fall: _____

Groundwater Readings

Date	Depth	Casing	Stabil. Time

Sample No.	Recovery	Depth	Blows	PID	Description
N/A	N/A	0 - 5	cuttings	0.5	Dark brown silty and, construction debris.
		5 - 10	cuttings	0.4	Brown silty sand, some gravel.
		10 - 15	cuttings	0.3	Gray sandy silt, gray clay. Water at 10.5' bgs.

2" Schedule 40 Threaded PVC Monitoring Well Installation:\

Screen: 15 - 10' bgs; 0.02" factory slotted filter sock
Sand Pack: 15 - 9" bgs
Bentonite: 9 - 8' bgs
Clean Sand Fill: 8' - surface
Cement: N/A
Well guard: N/A
Stick up: 1.16
Total Depth: 16.16 TOC
Depth to water: 10.26 TOC

Proportions Used
Trace: 0 to 10 %
Little: 10 to 20%
Some: 20 to 35%
And: 35 to 50%

Penetration Resistance
140lb wt falling 30" on 2" O.D. Sampler

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Stiff
		31+	Hard

Well Construction Legend

Concrete	Bentonite
Grout	Silica Sand
Backfill	Bedrock

[U:\DREESE\WPDOCS\DAVNPORT.SL1]

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Davenport/Convent
REPORT DATE: May 4, 1995
DATE SAMPLED: April 21, 1995

PROJECT CODE: HNND1840
REF.#: 73,429 - 73,430

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated preservation with NaN_3.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Davenport/Convent
REPORT DATE: May 4, 1995
DATE SAMPLED: April 21, 1995
DATE RECEIVED: April 21, 1995
DATE ANALYZED: May 2, 1995

PROJECT CODE: HNND1840
REF.#: 73,429
STATION: MW-1
TIME SAMPLED: 11:30
SAMPLER: D. Reese

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 105%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Davenport/Convent
REPORT DATE: May 4, 1995
DATE SAMPLED: April 21, 1995
DATE RECEIVED: April 21, 1995
DATE ANALYZED: May 3, 1995

PROJECT CODE: HNND1840
REF.#: 73,430
STATION: MW-2
TIME SAMPLED: 11:50
SAMPLER: D. Reese

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 102%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

14125

CHAIN-OF-CUSTODY RECORD

Project Name: DAVENPORT/CONANT Site Location: WINOOSKI, VT	Reporting Address:	Billing Address:
Endyne Project Number: HNNS 1840	Company: WHN Contact Name/Phone #: D. REESE	Sampler Name: D. REESE Phone #: WHN

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
73429	MW 1	WATER	X		1130	2	40 ml		602	HCl	
73430	MW 2	↓	↓		1150	↓	↓		↓	↓	

Relinquished by: Signature	Received by: Signature	Date/Time 4-21-95 4:40
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										